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EXAMINER

MAKI, STEVEN D

ART UNIT PAPER NUMBER

1733

DATE MAILED: 05/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/770,619

Applicant(s)

NAKAMURA, KOUICHI

Examiner

Steven D. Maki

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 24 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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1) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Hawkinson

2) **Claims 1 and 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkinson (US Des. 177233) in view of Tsurunaga et al (US 5002110).**

This rejection may be overcome by incorporating the limitation of claim 2 into claim 1.

Hawkinson discloses a tire having a tread. See title and figures 1 and 2. The tread includes transverse grooves extending from one tread edge to the other tread edge. Each transverse groove comprises two shoulder groove portions (main lug grooves), which are (a) inclined in the same direction which is opposite the direction of inclination of a central groove portion and (c) arranged so as to provide a circumferential phase difference between opposing tread shoulders. Figure 2 illustrates the cross section of the transverse groove. As can be seen from figure 2, the bottom of the transverse groove has three protrusions (a first outer protrusion, a second central protrusion and a third outer protrusion). The protrusions at the bottom of the transverse groove cause the groove depth of the transverse groove to be "shallow" at each of the three protrusions. The claimed "narrow shallow groove ... for connecting each main lug groove located in the opposing tread shoulder regions" reads on the shallow groove portion defined by the second central protrusion. The term "narrow" is a relative term,

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which fails to require a width different from that disclosed by Hawkinson. Hawkinson does not disclose that the tire is a pneumatic tire.

As to claim 1, it would have been obvious to one of ordinary skill in the art to provide a pneumatic tire with a tire tread as shown by Hawkinson since (a) Hawkinson teaches using the illustrated tread for a tire and (b) it is well known / conventional to use a tread pattern, which like Hawkinson's tread pattern comprises transverse grooves extending from one tread edge to the other tread edge, for a pneumatic tire as evidenced by for example by Tsurunaga et al.

Claims 3 and 6, which appear to define a specified width of a region instead of a specified width of the narrow shallow groove portion, fail to define over the tread as shown by Hawkinson.

As to claim 4, the limitation of the narrow shallow groove portion having a width of 35-100% is suggested by figure 1 of Hawkinson. For example, Hawkinson fails to show the shallow groove portion defined by the second central protrusion as having a width wider than (greater than 100% of) the width of the shoulder groove portions.

As to claim 5, the limitation of the groove depth at the shallow portion being 50-80% of groove depth of the main lug groove would have been obvious since the outer protrusions which are part of the design of Hawkinson are shown as being at a depth of about 2/3 depth of the shoulder groove portions such that they are below a narrow circumferentially extending groove as illustrated in figure 2 and can be seen when observing a view in elevation of a tire (figure 1).

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Bettiol

3) **Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bettiol (WO 01/39994) in view of Japan '308 (JP 4-228308).**

Bettiol is available as prior art under 35 USC 102(e) since it was filed on November 29, 2000. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Also, it appears that a translation of applicant's foreign priority paper would not remove Bettiol as a reference under 102(e) since WO 01/39994 claims priority to US 60/176628 which was filed January 19, 2000. Bettiol has not been applied against claim 1 because claim 1 requires "the main lug grooves ... have the same inclining direction in the opposing shoulder regions, wherein a narrow shallow groove inclined in the opposite direction with respect to each main lug groove" (emphasis added) whereas Bettiol discloses inclining the main lug grooves *between the shoulder blocks* in the same direction (instead of opposite direction) as the inclination of the narrow central groove between center blocks 19.

Bettiol discloses a tire having a tread for use on a motor vehicle for medium and heavy transport. The tire is a pneumatic tire. See page 9, which describes the tire as having a carcass, belt package and beads. Bettiol discloses a shallow narrow groove for connecting main lug grooves which are disposed in opposed shoulder regions and are arranged as to provide circumferential phase difference. The depth of the shallow narrow groove is h1 (2-6 mm) and the depth of the main groove is h (18-24 mm). At

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pages 14-15, Bettiol discloses using $h = 21$ mm and $h_1 = 3$ mm. In this example, the groove depth of the narrow shallow groove is 14.3% ($3 \text{ mm} / 21 \text{ mm}$). As to claim 8, it would have been obvious to provide the narrow shallow groove with a depth h_1 of 15-25% of the depth h of the main lug groove in view of Bettiol's teaching to use a depth h_1 of 2-6 mm for the narrow shallow groove and a depth h of 18-24 mm for the main lug groove a groove depth range of 8.3% ($2 \text{ mm} / 24 \text{ mm}$) to 33% ($6 \text{ mm} / 24 \text{ mm}$) thereby being suggested in addition to the specific example of 14.3% ($3 \text{ mm} / 21 \text{ mm}$).

Bettiol does not recite providing a shallow groove region in a shoulder end region inside each main lug groove. However, it would have been obvious to provide a shallow groove region in a shoulder end region inside each main lug groove of Bettiol since Japan '308, which shows a tread pattern similar to that of Bettiol and, like Bettiol teaches using that tread pattern for heavy load, suggests locating a raised part 4 at the groove bottom of grooves between shoulder blocks to reduce abnormal wear.

Tsurunaga

4) **Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsurunaga et al (US 5002110) in view of at least one of Japan '507 (JP 3-193507), Semonin (US 3467159) and Japan '308 (JP 4-228308).**

Tsurunaga et al, directed to a vibration reducing lugged tread, discloses a pneumatic tire having a tread comprising **wide laterally extending groove portions (main lug grooves) 14** disposed in opposing shoulder regions of the tread and **narrow shallow groove (shallow groove having its bottom defined by platform 16)** in a central region of the tread for connecting the laterally extending groove portions (main

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lug grooves) 14 wherein the laterally extending groove portions (main lug grooves) 14 are arranged so as to provide circumferential phase difference between the opposing tread shoulder regions. The term "narrow" is a relative term, which fails to define a width different from the width of Tsurunaga et al's narrow groove. As can be seen from figure 1 of Tsurunaga et al, the laterally extending groove portions (main lug grooves) 14 are inclined in the same direction which is opposite a direction of the narrow shallow groove (shallow groove having its bottom defined by platform 16). The tire of Tsurunaga et al is an off-road tire having a size such as 26.5 - 25 and used for vehicles such as a wheel loader. The tire of Tsurunaga et al therefore is a heavy load tire. The only difference between the claimed tire and Tsurunaga et al's tire is the "shallow groove portion" in a shoulder end region inside the main lug groove.

As to claim 1, it would have been obvious to one of ordinary skill in the art to form a shallow groove portion in a shoulder end region inside each laterally extending groove portion (main lug grooves) 14 of Tsurunaga et al's lug tread for heavy load tires in view of at least one Japan '507, Semonin and Japan '308 - (a) Japan '507 teaching to provide a construction vehicle tire (a heavy load tire) with a shallow groove portion in a shoulder end region of a lug tread *to provide substantial wear resistance*, (b) Semonin teaching to form a shallow groove portion (wedge 22) in a main lug groove 16 of a tire for off road equipment such as front loaders (a heavy load tire) *so that deflection of the tire at the shoulders is reduced and lateral stability of the tire is improved* (the groove at the central region of the tread of Semonin, like that of Tsurunaga, being shallow), and (c) Japan '308 suggesting to form a shallow groove portion (raised part 4) in a shoulder

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region inside each lug groove of a pneumatic tire for heavy load to *reduce abnormal wear* (abstract).

As to claim 8, the limitation of the narrow groove depth being 15-25% of the groove depth of the main lug groove would have been obvious depending on the desired reduction in RFV in view of (a) Tsurunaga et al's teaching to size the platform 16 in the first embodiment so as to define a shallow groove shallower than each of the groove portions 14 (a low percentage of main lug groove depth thereby being suggested) and (b) Tsurunaga et al's that a depth of 0% of main lug groove depth may be used (see second embodiment in which grooves are not formed in the mid-circumferential plane of the tire), and (c) Tsurunaga et al's teachings regarding the effect on RFV for the first embodiment tire and the second embodiment tire.

As to the dependent claims, the following comments are made: As to claim 2, note examiner's comments regarding claim 8. As to claim 3, the limitation of the narrow groove region being 20-40% of the width of the tread portion would have been obvious since as can be seen from figure 1 of Tsurunaga et al, the narrow shallow groove (defined by the platform 16) is in a region which less than 1/2 (50%) of the tread width. As to claim 4, the limitation of the narrow groove width being 35-100% of main lug groove width would have been obvious in view of the Tsurunaga et al's disclosure regarding the relative widths for the main lug grooves 14 and the narrow shallow groove defined by platform 16. As to claim 5, the limitation of the shallow groove portion in the lug groove having a depth of 50-80% of the main lug groove depth would have been obvious in view of the depth of the shallow groove portion suggested by at least one

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Japan '507, Semonin and Japan '308; it being noted for example that Semonin teaches using a shallow groove portion depth of 55-60% of the main lug groove depth (the height of the shallow portion is 40-45% of the non-skid depth). As to claim 6, the limitation of the shallow groove portion in the lug groove having a length of 20-50% of the main lug groove length would have been obvious in view of the length of the shallow groove portion suggested by at least one of Japan '507, Semonin and Japan '308; it being noted for example that (a) the shallow groove portion of Semonin is used in the shoulder to improve lateral stability and (b) the length L1 of the shallow groove portion (raised part 4) of Japan '308 is 0.05 – 0.25 times tread width TW. As to claim 7, the main groove grooves have a bending point as shown in figure 1.

Remarks

5) Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

The prior art rejection using Fishman has been withdrawn in view of the amendment filed 2-24-03 and applicant's corresponding arguments.

6) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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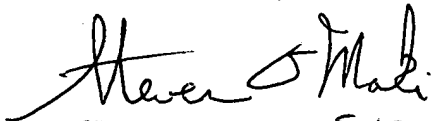
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is 703-308-2068. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Steven D. Maki
May 15, 2003


STEVEN D. MAKI
PRIMARY EXAMINER
~~GROUP 1300~~
AU 1733
5-15-03